**Ms.Mechalske's Outline**

**Earth Science Module 1 Checklist:**

EEn.1.1, EEn.2.1, EEn.2.2, EEn.2.3, EEn.2.4, EEn.2.5, EEn.2.6, EEn.2.7, EEn.2.8

**Essential Question: What is earth and environmental science?**

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| **Assignment** | **Check off when Completed** |
| **Getting Started Lesson** | **August 27-30** |
| **Read Google Docs**   1. **Grades** 2. **Student Conduct** 3. **What type of online learner am I?** |  |
| **Getting Started Quiz** |  |
| **Set up Wimba pronto/IM** |  |
| **Setup Gizmo Account** |  |
| **Assignment**  **Module 1** | **Due Date**  **September 3-6** |
| View Earth Science Video and the 4 Branches of Earth Science Videos  **1.1 Forum: Four Main Branches of Earth Science**  1.1 Formative Activity |  |
| **1.2 Graphic Organizer** |  |
| Scientific Method Presentation  Scientific Method Flash Cards  Scientific Method Video  Formative Assessment – Order of Scientific Method  **1.3 Study Guide** |  |
| **1.4 Gizmo – Effect of the environment on a new life form** |  |
| **1.5 Assessment** |  |
| **1.7 Honors – Scientific Method** |  |

**Earth Science Module 2 Checklist:**

2.2.1: Explain the consequences of human activities on the lithosphere (such as mining, deforestation, agriculture, overgrazing, urbanization, and land use) past and present.

2.2.2: Compare the various methods humans use to acquire traditional energy sources (such as peat, coal, oil, natural gas, nuclear fission, and wood).

2.7.3: Explain how human activities impact the biosphere.

2.8.1: Evaluate alternative energy technologies for use in North Carolina.

2.8.2: Critique conventional and sustainable agriculture and aquaculture practices in terms of their environmental impacts

2.8.4: Evaluate the concept of “reduce, reuse, recycle” in terms of impact on natural resources.

**Essential Question: What is the human impact on the lithosphere?**

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| **Assignment**  **MODULE 2** | **Completed**  **September 9-13** |
| **2.1 Lecture & Study Guide**  **Formative Assessment** |  |
| **2.2 Soil Webquest** |  |
| **2.3 Gizmo: Household Energy Use** |  |
| **2.4 Columbia River Debate** |  |
| **2.5 Assessment** |  |
| **2.7 Honors - Timeline** |  |

**Earth Science Module 3 Checklist:**

2.1.1 Explain how the rock cycle, plate tectonics, volcanoes, and earthquakes impact the lithosphere.

2.1.2 Predict the locations of volcanoes, earthquakes, and faults based on the information contained in a variety of maps.

2.1.3 Explain how natural actions such as weathering, erosion, and soil formation affect Earth's surface.

2.2.1 Explain the consequences of human activities on the lithosphere.

**Essential Question: What are the processes that shape the lithosphere?**

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| **Assignment**  **Module 3** | **Completed**  **September 16-20** |
| **3.1 Lecture & Study Guide**  **Formative Assessment** |  |
| **3.2 Geohazard / Land Form Glogster** |  |
| **3.3 Gizmo: The Rock Cycle** |  |
| **3.4 Forum: The Dust Bowl** |  |
| **3.5 Assessment** |  |
| **3.7 Honors – Writing Assignment** |  |

**Earth Science Module 4 Checklist:**

2.1.1 Explain how the rock cycle, plate tectonics, volcanoes, and earthquakes impact the lithosphere.

 2.1.2 Predict the locations of volcanoes, earthquakes, and faults based on information contained in a variety of maps.

 2.1.4 Explain the probability of and preparation for geohazards such as landslides, avalanches, earthquakes and volcanoes in a particular area based on available data.

**Essential Question: What are the effects of the earth’s plates moving?**

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| **Assignment**  **Module 4** | **Completed**  **September 23-27** |
| **4.1 Lecture**  **Plate Tectonic Vocabulary**  **Plate Tectonic Overview Video**  **Plate Tectonic Interactive Activity**  **Formative Assessment**  **4.1 Tracking Plate Movement** |  |
| **Earthquake Power point**  **Earthquake Podcast**  **Interactive Earthquake Activity**  **4.2 Earthquake Predictions** |  |
| **Volcano Power point**  **Volcano Podcast**  **Interactive Volcano Activity**  **Interactive Volcano Lesson**  **4.3 Volcano Comparison** |  |
| **Mountain Building Notes**  **Mountain Building Video**  **Mountain Building Review**  **Formative Assessment**  **4.4 Grandfather Mountain Quiz** |  |
| **4.5 Assessment** |  |
| **4.7 Honors – Adopt a volcano** |  |

**Earth Science Module 5 Checklist:**

2.2.1:  Explain the consequences of human activities on the lithosphere (such as mining, deforestation, agriculture, overgrazing, urbanization, and land use) past and present

2.2.2:  Compare the various methods humans use to acquire traditional energy sources (such as peat, coal, oil, natural gas, nuclear fission, and wood).

2.6.3:  Analyze the impacts that human activities have on global climate change (such as burning hydrocarbons, greenhouse effect, and deforestation).

2.7.3:  Explain how human activities impact the biosphere.

2.8.1:  Evaluate alternative energy technologies for use in North Carolina

2.8.4:  Evaluate the concept of “reduce, reuse, recycle” in terms of impact on natural resources.

**Essential Question: What are non-renewable energy resources?**

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| **Assignment**  **Module 5** | **Completed**  **September 30-October 4** |
| **5.1 Lecture & Study Guide**  **Video: Are fossil fuels running out?**  **Formative Review** |  |
| **5.2 Create a voki** |  |
| **5.3 Gizmo: Energy Conversions** |  |
| **5.4 Energy Webquest** |  |
| **5.5 Assessment** |  |
| **5.7 Honors – Energy Pros and Cons** |  |

**Earth Science Module 6 Checklist:**

2.2.1 Explain the consequences of human activites on the lithosphere.

2.6.3 Analyze the the impacts that human activities have on global climate change.

2.7.3 Explain how human activities impact the biosphere.

2.8.1 Evaluate alternative energy technologies for use in North Carolina.

2.8.4 Evaluate the concept of "reduce, reuse, recycle" in terms of impact on natural resources.

**Essential Question: What are renewable energy resources?**

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| **Assignment**  **Module 6** | **Completed**  **October 7-11** |
| **6.1 Lecture & Study Guide**  **Formative Assessment – Matching Game** |  |
| **6.2 Lab Choice – Pick one of three lab options to complete** |  |
| **6.3 Forum: Ten ways you can reduce your use of fossil fuels** |  |
| **6.4 Forum: Alternative Energy** |  |
| **6.5 Assessment** |  |
| **6.7 Honors – Wind Study** |  |

**Earth Science Module 7 Checklist:**

2.1.1 Explain how the rock cycle, plate tectonics, volcanoes, and earthquakes impact the lithosphere.

 2.1.2 Predict the locations of volcanoes, earthquakes, and faults based on information contained in a variety of maps.

 2.7.2 Explain why biodiversity is important to the biosphere.

 2.6.4 Attribute changes in Earth systems to global climate change (temperature change, changes in pH of ocean, sea level changes, etc.).

**Essential Question: What are some geologic events in NC history?**

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| **Assignment**  **Module 7** | **Completed**  **October 14-18** |
| **7.1 Lecture & Study Guide**  **Video: A glimpse of the earth’s past** |  |
| **7.2 NC Geologic History Scramble** |  |
| **7.3 NC Geologic History Scavenger Hunt** |  |
| **7.4 Gizmo: Half-life** |  |
| **7.5 Assessment** |  |
| **7.7 Honors – Forum: Mass Extinction** |  |

**Earth Science Module 8 Checklist:**

EEn.1.1, EEn.2.1, EEn.2.2, EEn.2.3, EEn.2.4, EEn.2.5, EEn.2.6, EEn.2.7, EEn.2.8

**Essential Question: What are main points of the first half of the Earth Science course?**

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| **Assignment**  **Module 8** | **Completed**  **October 21-25** |
| **8.1 Lecture & Study Guide** |  |
| **8.2 Midterm Project** |  |
| **8.3 Midterm review of resources** |  |
| **8.4 Formative Exam Review** |  |
| **8.5 Midterm** |  |
| **8.7 Honors – Creating a volcano** |  |

**Earth Science Module 9 Checklist:**

2.1.1 Explain how Earth's processes impact the lithosphere.

2.1.3 Explain how natural actions such as wave erosion affect the Earth's surface.

2.4.1 Evaluate human influences on freshwater availability.

2.4.2 Evaluate human influences on water quality in North Carolina.

2.6.4 Attribute changes to Earth's systems to global climate change.

2.7.3 Explain how human activities impact the biosphere.

**Essential Question: What are some impacts of beach erosion?**

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| **Assignment**  **Module 9** | **Completed**  **October 28-November 1** |
| **9.1 Lecture & Study Guide**  **Formative Assessment** |  |
| **9.2 Shell Island Dilemma** |  |
| **9.3 Oceans Overview Video Lab** |  |
| **9.4 Upwelling Lab Choice – Choose between 2 labs to complete this assignment** |  |
| **9.5 Forum: Coastlines** |  |
| **9.6 Assessment** |  |
| **9.7 Honors – Gizmo: Coastal Winds and Clouds** |  |

**Earth Science Module 10 Checklist:**

2.3.2 Explain how ground water and surface water interact.

2.4.1 Evaluate human influences on freshwater availability.

2.4.2 Evaluate human influences on water quality in North Carolina’s river basins, wetlands and tidal environments.

**Essential Question: What is the water cycle?**

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| **Assignment**  **Module 10** | **Completed**  **November 4-8** |
| **10.1 Lecture & Study Guide** |  |
| **10.2 Gizmo: Water Cycle** |  |
| **10.3 NC Estuaries** |  |
| **10.4 Forum: Water Conservation** |  |
| **10.5 Assessment** |  |
| **10.7 Honors – Where does the rain go?** |  |

**Earth Science Module 11 Checklist:**

2.5.1 Summarize the structure and composition of our atmosphere.

2.5.2 Explain the formation of typical air masses and the weather systems that result from air mass interactions.

2.5.3 Explain how cyclonic storms form based on the interaction of air masses.

**Essential Question: What processes in the atmosphere effect weather?**

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| **Assignment**  **Module 11** | **Completed**  **November 11-15** |
| **11.1 Lecture & Study Guide**  **Formative Assessment** |  |
| **11.2 Gizmo: Hurricane Motion** |  |
| **11.3 Concept Map** |  |
| **11.4 Weather Webquest** |  |
| **11.5 Assessment** |  |
| **11.7 Honors – Identify clouds** |  |

**Earth Science Module 12 Checklist:**

2.6.1: Differentiate between weather and climate.

2.7.1: Explain how abiotic and biotic factors interact to create the various biomes in North Carolina.

2.7.2: Explain why biodiversity is in important to the biosphere.

**Essential Question: What is the difference between weather and climate?**

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| **Assignment**  **Module 12** | **Completed**  **November 18-22** |
| **12.1 Lecture & Study Guide**  **Formative Assessment** |  |
| **12.2 Overview of Biomes Chart** |  |
| **12.3 Forum: Protecting Biodiversity in NC** |  |
| **12.4 Invasive Species Lab** |  |
| **12.5 Assessment** |  |
| **12.7 Honors – Climate Webquest** |  |

**Earth Science Module 13 Checklist:**

2.5.5 Explain how human activities affect air quality.

2.6.1 Differentiate between weather and climate.

2.6.2 Explain changes in global climate due to natural processes.

2.6.3 Analyze the impacts that human activities have on global climate change (such as burning hydrocarbons, greenhouse effect, and deforestation).

2.6.4 Attribute changes in Earth systems to global climate change (temperature change, changes in pH of ocean, sea level changes, etc.).

**Essential Question: What are the effects of air pollution?**

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| **Assignment**  **Module 13** | **Completed**  **November 25-27** |
| **13.1 Lecture & Study Guide**  **Formative Assessment** |  |
| **13.2 Air Pollution and Global Change Choice** |  |
| **13.3 Air Pollution & Global Change Forum** |  |
| **13.4 Air Pollution & Solutions Video Quiz** |  |
| **13.5 Assessment** |  |
| **13.7 Honors – Air Pollution Poster** |  |

**Earth Science Module 14 Checklist:**

2.5.4 Predict the weather using available weather maps and data  (including surface, upper atmospheric winds, and satellite  imagery).

**Essential Question: How do you predict the weather?**

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| **Assignment**  **Module 14** | **Completed**  **December 2-6** |
| **14.1 Lecture & Study Guide**  **Formative Assessment** |  |
| **14.2 NOAA Weather and NC** |  |
| **14.3 Gizmo: Weather Maps** |  |
| **14.4 Weather Forecast** |  |
| **14.5 Assessment** |  |
| **14.7 Honors – NOAA Satelites** |  |

**Earth Science Module 15 Checklist:**

1.1.1 Explain the Earth's motion through space, including precession, nutation, the barycenter, and its path about the galaxy.

1.1.2 Explain how the Earth's rotation and revolution about the Sun affect its shape and is related to seasons and tides.

**Essential Question: What are some facts about planetary motion?**

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| **Assignment**  **Module 15** | **Completed**  **December 9-13** |
| **15.1 Lecture & Study Guide**  **Formative Game Play** |  |
| **15.2 Collaborative Forum** |  |
| **15.3 Venn Diagram** |  |
| **15.4 Planetary Motion Lab** |  |
| **15.5 Assessment** |  |
| **15.7 Honors – Earth Travel Brochure** |  |

**Earth Science Module 16 Checklist:**

1.1.3 Explain how the sun produces energy which is transferred to the Earth by radiation.

1.1.4 Explain how incoming solar energy makes life possible on Earth.

**Essential Question: What are the effects of the sun on you?**

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| **Assignment**  **Module 16** | **Completed**  **December 16-20** |
| **16.1 Study Guide**  **16.1 Formative Assessment** |  |
| **16.2 Gizmo: Why do we have seasons?** |  |
| **16.3 Solar Activity** |  |
| **16.4 Forum: Life without the sun** |  |
| **16.5 Assessment** |  |
| **16.7 Honors – Nuclear Fusion Press Release** |  |

**Earth Science Module 17 Checklist:**

1.1.1 Explain the Earth’s motion through space, including precession, nutation, the barycenter, and its path about the galaxy.

1.1.2 Explain how the Earth’s rotation and revolution about the Sun affect its shape and is related to seasons and tides.

1.1.3 Explain how the sun produces energy which is transferred to the Earth by radiation.

1.1.4 Explain how incoming solar energy makes life possible on Earth.

2.1.1 Explain how the rock cycle, plate tectonics, volcanoes, and earthquakes impact the lithosphere.

2.1.2 Predict the locations of volcanoes, earthquakes, and faults based on information contained in a variety of maps.

2.1.3 Explain how natural actions such as weathering, erosion (wind, water and gravity), and soil formation affect Earth’s surface.

2.1.4 Explain the probability of and preparation for geohazards such as landslides, avalanches, earthquakes and volcanoes in a particular area based on available data.

2.2.1 Explain the consequences of human activities on the lithosphere (such as mining, deforestation, agriculture, overgrazing, urbanization, and land use) past and present.

2.2.2 Compare the various methods humans use to acquire traditional energy sources (such as peat, coal, oil, natural gas, nuclear fission, and wood).

2.3.1 Explain how water is an energy agent (currents and heat transfer).

2.3.2 Explain how ground water and surface water interact.

2.4.1 Evaluate human influences on freshwater availability.

2.4.2 Evaluate human influences on water quality in North Carolina’s river basins, wetlands and tidal environments.

2.5.1 Summarize the structure and composition of our atmosphere.

2.5.2 Explain the formation of typical air masses and the weather systems that result from air mass interactions.

2.5.3 Explain how cyclonic storms form based on the interaction of air masses.

2.5.4 Predict the weather using available weather maps and data(including surface, upper atmospheric winds, and satellite imagery)

2.5.5 Explain how human activities affect air quality.

2.6.1 Differentiate between weather and climate.

2.6.2 Explain changes in global climate due to natural processes.

2.6.3 Analyze the impacts that human activities have on global climate change (such as burning hydrocarbons, greenhouse effect, and deforestation).

2.6.4 Attribute changes in Earth systems to global climate change (temperature change, changes in pH of ocean, sea level changes, etc.).

2.7.1 Explain how abiotic and biotic factors interact to create the various biomes in North Carolina

2.7.2 Explain why biodiversity is important to the biosphere.

2.7.3 Explain how human activities impact the biosphere.

2.8.1 Evaluate alternative energy technologies for use in North Carolina.

2.8.2 Critique conventional and sustainable agriculture and aquaculture practices in terms of their environmental impacts.

2.8.3 Explain the effects of uncontrolled population growth on the Earth’s resources.

2.8.4 Evaluate the concept of “reduce, reuse, recycle” in terms of impact on natural resources.

**Essential Question: To review for the final?**

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| **Assignment**  **Module 17** | **Completed**  **January 2-7** |
| **17.1 Final Exam Review**  **Formative Game Play** |  |
| **17.2 Exam Review Questions** |  |

**Earth Science Module 18 Checklist:**

EEn.1.1, EEn.2.1, EEn.2.2, EEn.2.3, EEn.2.4, EEn.2.5, EEn.2.6, EEn.2.7, EEn.2.8

**Essential Question: To complete the final exam?**

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| **Assignment**  **Module 18** | **Completed**  **January 8-10** |
| **18.1 Earth Science Evaluation** |  |
| **18.2 Final Exam** |  |